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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,375	12/18/2001	Lawrence J. DaQuino	10010792-1	2452

7590 05/30/2006

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EXAMINER	
LAM, ANN Y	

ART UNIT	PAPER NUMBER
1641	

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,375	DAQUINO ET AL.	
	Examiner	Art Unit	
	Ann Y. Lam	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 29-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 29-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

Claims 18-28 have been canceled.

Claims 36-41 have been newly added.

Claims 1-17 and 29-41 are currently pending.

Terminal Disclaimer

1. The terminal disclaimer filed on March 24, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Patent No. 6,935,727 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6-13, 15-17, 29-33 and 35-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beerling et al., 6,508,536, in view of McDevitt et al., 6,713,298.

Beerling et al. disclose the invention substantially as claimed. More specifically, as to claims 1, 10 and 29, Beerling et al. disclose a pulse jet printhead comprising:

(a) a multiple die printhead (12) comprising:

(i) an orifice plate (20 and 58, see col. 4, lines 15-17) comprising a plurality of orifices (38); and

(ii) a plurality of thermal printhead dies (18, see col. 2, lines 46-48) present on a surface of said orifice plate in operational alignment with said orifices to produce at least one firing chamber; and

(b) a volume of an aqueous fluid (40, col. 3, line 42) in said at least one firing chamber.

However, Beerling et al. do not teach that the fluid is a biopolymer. McDevitt et al. teach this limitation.

McDevitt et al. teach that an array of biopolymers such as DNA and proteins (col. 4, lines 41-44, and col. 5, lines 10-12, 48-50, and 55-59) can be applied onto a substrate through a dispense head that is made using technology essentially identical to that used in "ink-jet" printer heads (col. 101, lines 26-34.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a sample of DNA or proteins as the fluid in the Beerling et al. printhead because McDevitt et al. teach that providing DNA or proteins in ink-jet printer head technology, such as that taught by Beerling et al., provide the advantage of ejecting DNA or proteins such that a sensor array is formed.

As to the following claims, Beerling et al. teach the limitations as follows.

As to claims 2-4, 11-13 and 31-33 the printhead comprises from 2 to about 10 printhead dies, or 2 to 5 printhead dies, or 3 printhead dies (col. 2, lines 46-48 and see fig. 1.)

As to claim 8, said printhead is present in a printhead assembly that further includes at least one fluid reservoir (36) in fluid communication with said firing chamber.

As to claims 26-41, the single orifice plate is considered to be at (20), having a plurality of orifices (32), (see fig. 3 and 5), and the printhead dies are bonded to the single orifice plate (20) (see column 4, lines 49-59, disclosing a heat bond).

Moreover, as to claim 39-41, the multiple printhead dies (18) are parallel to each other (see fig. 1).

As to claims 6, 7, 9, 15, 16, 17, 30 and 35, McDevitt et al. teach that the biopolymer is polypeptides or nucleic acids (col. 5, lines 55-58.)

3. Claims 5, 14 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beerling et al., 6,508,536, in view of McDevitt et al., 6,713,298, as applied to claim 1, 10 and 30, and further in view of Gordon et al., 5,855,835.

Beerling et al. in view of Schultz et al. disclose the invention substantially as claimed (see above). Although Beerling et al. teach a substrate, Beerling et al. do not teach that the substrate material is a semiconductor.

Gordon et al. teaches a thermal jet printhead (col. 2, lines 65-66) wherein the resistor is formed on a substrate (20) that is made of semiconductor (col. 3, lines 5-6). It would have been obvious to one of ordinary skill in the art at the time the invention

was made to utilize semiconductor as taught by Gordon et al. as the material to form the substrate generally disclosed by Beerling et al. because Gordon et al. teaches that semiconductor material is a known material used to form a substrate for a resistor in a thermal jet printhead, such as that disclosed by Beerling et al.

Response to Arguments

Applicant's arguments filed March 17, 2006 have been fully considered but they are not persuasive.

Applicant argues on page 7 that the carrier substrate of Beerling et al. does not have multiple orifices and the multiple printhead dies are bonded to the carrier substrate but not the orifice plate having a plurality of orifices. This is not persuasive because the carrier substrate (2) has a plurality of orifices at (32), (see figure 3 and 5).

Applicant also argues on page 8 that each printhead dies (18) has its own orifice plate with a plurality of orifices (22) with each printhead die bonded to the same carrier substrate (20), and thus Beerling et al. fails to teach the element of multiple printhead dies bonded to an orifice plate. This is not persuasive because the orifice plate is considered to be at (20), or alternatively (20 and 58). Thus, the printhead dies are bonded to (20). (The Office notes that in any case, it appears that Applicant's orifice plate may be equated to elements 52 or 54, or other layers with orifices—see figure 5--although this ground of rejection has not been made.)

Applicant also argues on page 9 that McDevitt et al. and Gordon et al. fail to make up the fundamental deficiency in Beerling et al. This is not persuasive because Beerling et al. disclose all the claimed limitations, as described above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann Y. Lam whose telephone number is 571-272-0822. The examiner can normally be reached on Mon.-Fri. 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.L. 5/19/06

LONG V. LE
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5/22/06